Centre For Curriculum & instructional materials

Department for Computer & Information Technology Development

Information and Communication Technology - Second Year Secondary

The Web Site Design Project



Second Year Secondary

First Term

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Information and Communication Technology

The Web Site Design Project

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Prepared by

Mr.Ahmad Abdallah Mansour
Computer and Information Technology Curricula Expert
Department for Computer and Information Technology Development

Dr.Taher Abdelhamid Eladly
Computer and Information Technology Curricula Expert and Head of Department
Centre For Curriculum &Instructional Materials Development

Mr.Ahmad Elansary Elsalamony
Computer and Information Technology Curricula Expert
Department for Computer & Information Technology Development

Mr.Mohamad Yousif Elsadek Yousif
Computer and Information Technology Curricula Expert
Department for Computer & Information Technology Development

Educationally revised by

Dr.Rougina Mohamad Hegazy
Expert in Centre For Curriculum & Instructional Materials Development

Technically revised by

Ms Mashaallah Mohamad Mohammad
Computer and Information Technology Curricula Expert Computer

Prof. Mohamad Fahmi Tolba
Computer and Information Technology Prof
Ain Shams University

Designed by

Ms Abeer Mohamad Anwar Mohamad
Computer & Information Technology Curricula Expert
Department for Computer & Information Technology development



Translated by

Ahmad Elshabrawy Abdelkhalek Tokhy
Curricula Expert
Centre For Curriculum & instructional materials Development

Sahar Hussien Badawi
Expert of English Language
Office of the development of the English language material director

Technical Terms

Dr.Taher Abdelhamid Eladly
Computer and Information Technology Curricula Expert and Head of Department
Centre For Curriculum &Instructional Materials Development

Tamer Abdel Mohsen Mansour
Computer and Information Technology Curricula Expert
Department for Computer & Information Technology Development

Designed by

Abeer hamed ahmed
Computer & Information Technology Curricula Expert
Department for Computer & Information Technology Development



Introduction

The continuous and rapid development in the field of information and communication technology imposes requirements for sophisticated methods of the educational process to keep up with the successive technological developments.

It is what led us to adopt new instructional entrances designed to achieve the goals, philosophy and visions contained in the document of computer and information technology that reflects the criteria and indicators for the subject for second year secondary that had been prepared in the framework of a matrix of the long relay at various stages of study.

The curriculum is designed to develop self-mail and collaborative thinking skills and different types of students through cooperation in the implementation of projects to design and create interactive Web site "Illustrated dictionary terms."

The idea of the project depends on the creation of a model program whose pages are designed by using (Expression Web), and the language of HTML coding, This project includes databases created by using MySQL program.

We deal with databases through templates that were written in PHP programming language)). They are open Source; you can copy and use them in the establishment of the site pages and understanding and the developing of any code you want to implement.

The book also includes pictures of the actual application interfaces executing the project, to clarify all the action steps, and simplify the concepts of learners, through activities and exercises comprising its operation in the dedicated book.

Finally, this book is keen to develop various thinking skills and life skills for using ICT through carrying out projects that give students opportunities to employ what they are studying in their working lives.

(God bless)

Staff



Table of contents



The objectives of the book of information and communication technology for secondary two:

- Know some of the concepts of operations related to infrastructure for computer systems, databases, programming languages of creating Web pages, and secure web sites, etc. ....
- Know some basic concepts and processes related to applications and services of information and communication technology.
- Understand some aspects of intellectual security (human and moral and social) and the security of information related to the use of information and communication technology.
- Use production technology tools (HTML & PHP & SQL ....) in the support and development of education.
- Produce the project of "Illustrated Dictionary of computer terms" using the processes and programs and technological tools.
- Employ technological tools of communication in the exchange of content, communication and interact and cooperate with others to support learning



- The use of technological tools and resources in dealing with information and data, electronic processing and evaluating and reporting the results.

Unit one

Basics of Web Site Design

By the end of the unit, it is expected that the student will be able to:

1- show some advanced scientific concepts and terms related to the computer.

2- employ computer programs in the implementation of learning tasks.

3- employ network of Internet services in the teaching and learning processes.

4- practise searches for all forms of electronic information on the computers and networks reliable in solving the problem of information.

Introduction

Previously, in the computer decision of the first grade secondary, we had a lot of knowledge and various skills through the production of "mail Atlas Arab" project. To continue what we started, you can set up more diverse projects in various areas of study and life. We will sail with you in a virtual world that is open to achieve pleasure, benefit and creativity while designing and creating a Web "Illustrated Dictionary of computer terms" site using free programming languages and open source applications which are the most prevalent in major global companies and institutions specialized in the field of information and communication technology.

The project of producing a site of "Dictionary Illustrated computer terms" serves as a model for General Dictionary terms through which you can enter all school subject terminology, and allows you to search for any term and display what it's intended for, and its image quickly and easily, in addition to the possibility to modify or delete it.



The first topic
Cybernetic Entrance of the Project



Learning Outcomes:

By the end of the topic students are expected to be able to:

1- recognize some basic concepts and terminology associated with creating a Web site dealing with databases.

2- distinguishes static web and dynamic web pages.

3- ractise preparing computer operations to become a SERVER.

4- recognize packs of programmes and web applications.

During the implementation of the "Illustrated Dictionary of computer terms" you should recognize some important basic concepts that we are going to use.

1- Freeware Programs

They are the programs whose owner" The owner of the intellectual property right" allows others to use them free of charge or with written permission from him.

2- Open Source Programs

They are the programs and published applications that give users access to the code, the possibility to modify, develop it in the light of the needs of its developers, and republish or use it after the amendment.

3- Static Web Page

It is an Information page that is displayed through one of the Internet browsers. It can be saved along .htm, .html page. It displays various types of data from text, numbers, images, and video tables and links ... etc.,. These data are accompanied by some effects through which we needn't conduct a treatment to page content



Figure (1) Static Web Page

4- Dynamic Web Page

It is an information page available on the Internet. It can be written in PHP or ASP.ne. It can display different types of data, and be made available through an address to the content of the page, such as restoring a value or displaying a message or an output.

Dynamic Web page contains the code executed on the server, for example:

- Implementation of a particular action based on the input process for example a user name and a password.
- The page contains the code to deal with a database at the server.

Sometimes you can see the page type (static and dynamic) of extension available in the URL

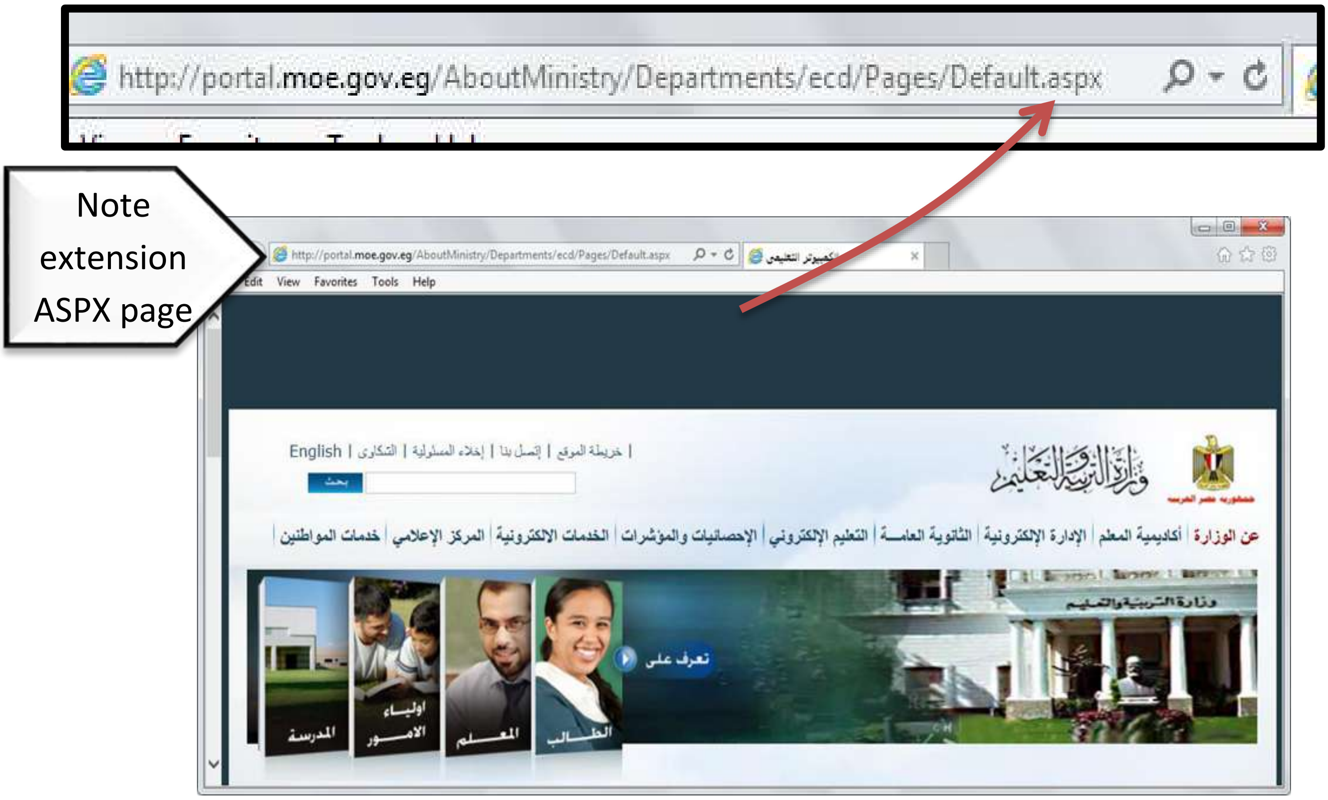


Figure (2) Dynamic web page

5- Server:

The term is intended to two different meanings:

Hardware server which is the most high powerfull computer network

Software server which is as a task or role run in the network.

The first:

It's the computer Hardware Server in a computer network. It is a device that has high technical specifications from the rest of network devices. It controls the rest of the network devices and through which the permissions of computer network users are determined by running the Server system.

The latter:
It is intended for the role of the computer in the computer network through Software, for example :

Web Server: means the device on which the computer Web site pages are stored.

Print Server: means computer printer connected to it, and controls the print management operations issued by any other device in the network.

E-mail server: is intended to store the computer device e-mail messages and controls the management of all e-mail processes and made them available for users of e-mail.

6- Script:

It is a sequence of instructions or code written in one of Web pages languages cutomized for web pages to perform a task or to process some of the data, including:

Server Side Languages	Client Side Languages
For Example:	**For Example:**
PHP	Java Script
ASP.net	VB Script
This code is run inside the browser to a server's "Run at server	This code is run inside the browser to a client's "Run at Client
"Run at Server	Run at Client

Note: For example

- **Make sure not to leave empty-user name field. It can be implemented through:**

  (Run at Client) Java script code

- **The verification code that the user name and password are correct and in the database server is implemented through:**

  .(Run at Server) ASP and PHP code

7- HTML" Hyper Text Markup Language:"

It's the language used to create the Static Web Page. This page can be saved along .htm, and pisplayed through one of the Internet browsers.

8- The language of PHP "Personal Home Page"

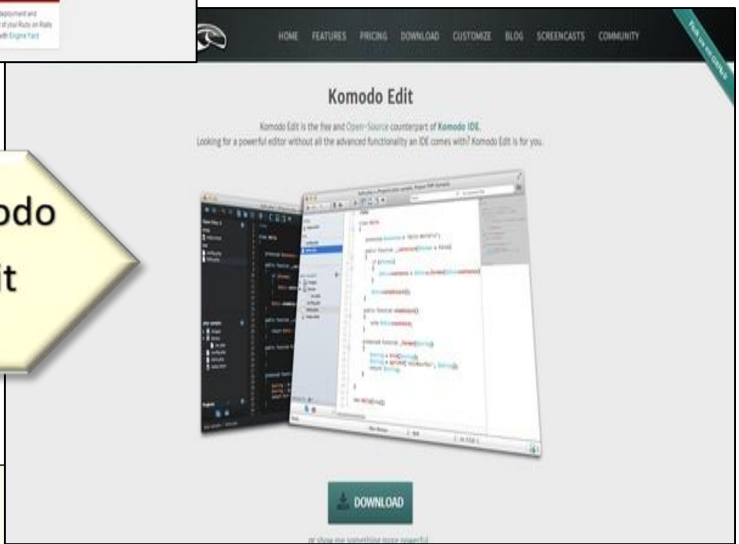
It's one of the specialized languages in developing dynamic web sites. It's a free open source language characterized by ease, speed, and operates the Server Side Language. Its own code can be included within the HTML code, and can easily connect different data bases safely.

The pages that contain PHP extension, PHP code are stored. To implement the code, we need to make some modifications needed to make the PC Server device using Apache Server program.

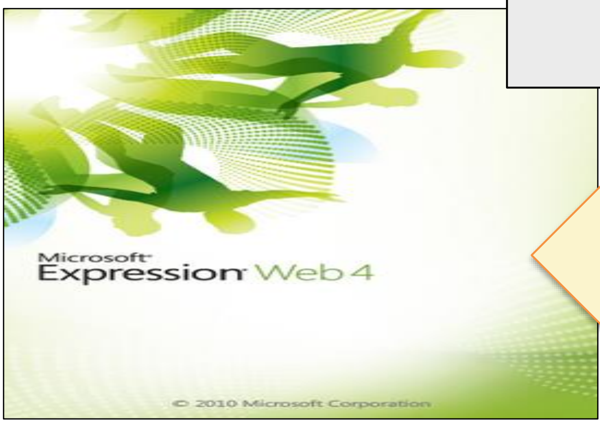
Any programming language needs an assistant program used to type the code. Among the most famous programs creating web pages in PHP language:



Aptana Studio



Komodo Edit



Expression web

Coffee Cup Free HTML Editor

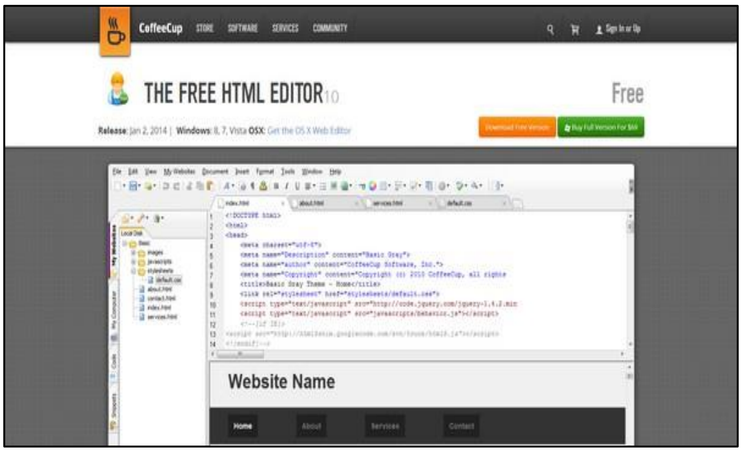


Figure (3): Some applications used to create Web pages

9- Apache Server:

The program is used with Server devices or simulates your personal computer to act as Server device so that it can translate the written code language PHP, which makes it easier for the developers of web sites to test web pages locally on Local computer before hosting it to the host server to be published on the Internet.

10- Publishing Web Site:

When you create a Web site, you need to test its pages and display them on an internet browser before it's available to visit on the internet. There are two ways to publish a site:

The first:

Localhost

Where the site is displayed on our computer or in a LAN .

The second :

Publishing Web Site

Where the web site is uploaded to the server. This server is called" web server which provides web hosting service" That allows" users to visit the site through the web site address or URL "Uniform Resource Locator", for example " the site of the Ministry of Education." "www.emoe.org.eg."

11- SQL "Structured Query Language:"

It's a programming language used in all operations of database management starting from creating the database and dealing with the data stored in tables that make up the database by writing simple sentences (orders) that allow you to carry out operations:

- Inserting new data (INSERT).
- Displaying previously stored data by (SELECT).
- Editing these data (UPDATE).
- Deleting these data (DELETE).

12- MySQL Server:

It's one of the applications of RDBMS "**Relational Data Base Management System**."

13- " Web Server Packages":

Web applications packages mainly contain:

- Installing web server (Apache Server).
- Installing database management system (MySQL).

On the Internet, there are free Web applications packages that can be installed, for example:

1- **Web applications package LAMP (Linux – Apache – MySQL – PHP).**

It includes Web server software (Apache Server), the application of MySQL database, and PHP programming language compiler and run on the Linux operating system.

2- **Web applications package WAMP (Windows – Apache – MySQL – PHP).**

It includes Apache Server software, the application of MySQL database, and scripting language compiler "PHP" and runs on the Windows operating system.

3- **Web applications package MAMP (PHP – MySQL – Apache – Mac) (Mac–Apache– MySQL–PHP)**

It includes Apache Server software, the application of MySQL database, and scripting language interpreter PHP and runs on Mac operating system.

4- **Web applications package (XAMPP) "X–os, Apache, MySQL, PHP, Perl"**

It includes a Web server (Apache Server), the application of MySQL database software, compiler and programming language PHP and Perl programming language that run on any operating system.

Note:

The essential difference between the previous web applications packages is the operating system you are working with.

14- Session:

It's a way to store information about the user (visitor of the website) in order to make it available for use across the pages of the site, such as: (User Name, Password, some general and personal data, ... etc). The user may need to register when he visits the internet site to enter both: (User Name & Password .This is done by opening "Session" in memory as a variable that receives the user name and password that was entered in the registration page. The the site developer allows this user to visit all site pages or not, according to the specific condition / conditions.



Practise (1)

Basic Concepts" in activity book Page (7)

The second topic

Planning the Project Site

"Illustrated Dictionary of Computer Terms:



Learning outcomes:

By the end of the unit, it is expected that the student will be able to:

1- determine required tasks to create a web site.

2- Plan the main page of a web site.

3- Load XAMPP program to run MySQL and Apache applications.

Aim of project

Designing and creating site of "Illustrated Dictionary of computer terms by using free or open source programs and applications.

The importance of the project

The importance of the project lies in making you practise writing your PHP code of dealing with MySQL through web site pages.

Thus, you can cosidser it a model to apply to create new varios sites with various uses after performing the required modifications.

Determine the tasks to be implemented in creating the site of, "Illustrated Dictionary of computer terms":

- **Configuring the suitable environment for crearting a site.**
- **Creating database fror saving the data of terms dictioinary that are inserted or modified through web pages.**
- **Designibg the main page**
- **Adding a term in Arabic and English, term scientific definition and a picture referring to a term and saving it in database.**
- **Searching for a term in database.**
- **Deleting a term in database**
- **Modifying a term data in database.**
- **Providing the required help on how to deal with the site.**

The following screen represents a aproposal of the main page of the site we are going to create:



Figure (4) a proposal of the main page of "Illustrated Dictionary of computer terms"

Do you have other proposals?



Discuss your proposals and how to excute them with your teacher and classmates:

Measures to create a Web site

Firstly: Configure the suitable environment to create websites

In order to set the necessary techniques to ensure running the site, and these settings and techniques that must be taken into account are:

(1) Selecting the programs which will be used in creating the project and installed on the computer .

(2) selecting how to save web pages information project files on the computer "server", and the possibility of displaing to one of the Internet browser programs, and sving these pages in the form of files on a computer "server",using one of the following options:

(A)

(A) We can book a site on the "Host Server" with charge.

(B)

(B) We can book a site onone of the free hosting servers free of charge.

(C)

(C) Publish the site locally on your computer "Localhost". We will select this option in the production of "Illustrated Dictionary of computer terms" project.

Important note:

All files of the site must be put in one folder containing subfolders includeing single-type files together. File names must be in brief and expressing their content in English.

(3) Preparing your computer to act as a server to host your site "Local Host:

When you create a Web site software, developers need to configure the appropriate environment for the establishing a website: "Illustrated Dictionary of computer terms, "This requires making your computer act as a Server, using Apache Server program, which translates the code written in language PHP language "Personal Home Pages."

- To test the site and validate it locally before it is published on the Internet just like what big companies do, you need to create your device to act as a server device to be ready to host the site.
- Examples of the programs used for this purpose: "XAMPP" program which is one of the best programs to set up your computer "Local Host". It is easy and you can deal with MySQL databases.



Activity (1)

Installing "XAMPP Program ".

Under the supervision of teacher, follow the steps to install XAMPP program described in the Activity book (١١)

Secondly, executing the "Illustrated Dictionary site computer terms through three stages, namely:

(1) stage of creating a database:

Store the data that is entered or displayed on the web site pages, through a database management programs such as: Access – MySQL…. etc.

(2) Stage of creating a page / static Web site

Through one of the following options:

HTML "Hyper Text Markup Language

Using "ready to-run programs" or applications, such as Application Program: Expression Web.

Note:

The site created by using an application or HTML contains static Web pages includeing various images of data and information.

(3) Stage of converting static Web pages into dynamic "Dynamic Web page:

Where the contents of the static Web page and the modification in the associated database by the user who is permitted to handle and modify the content, by writing code in one of the programming languages such as: PHP within the HTML code.

The site pages are displayed using one of the following Internet browsers:

Internet Explorer – Google Chrome – Firefox, etc..

Activity (2)

Run "XAMPP" Program



Under the supervision of your teacher, follow the steps outlined in the book of activities and exercises Page 15 to run XAMPP program in the right way





To create a project site "Illustrated Dictionary of computer terms", we should do the following:

We should:

1- create "Static Pages" through the application of "Expression Web" through which we can display "HTML" code .

2- process the contents of the static pages "to become Dynamic pages, by adding code language "PHP" within the "HTML code."

3- run XAMPP program that does the following:

- Running a Apache program that makes the device acts as a server.
- Running MySQL program that enable you to deal with

Which you are going to execute under the supervision of your teacherthrough following the procedures described in the book of activities and exercises.

Second Unit

Requirements and production stages of the project

By the end of the unit, it is expected students will be able to:

1- suggest simple projects to employ the applications and information and communication technology services in the fields of study and life.
2- employ information and communication technology applications in exchange projects' tasks.
3- employ some of desktop programs and applications (Worksheets – Data Bases..) in producing specific tasks within educational projects.
4- employ several programs to solve educational and life problems.
5- design suitable data base for his project.
6- practise PHP programming skills.
7- use some of Internet applications in the implementation of his project.
8- design interactive Web pages for his project.
9- link the interactive Web pages with Databases.
10- produce a project using advanced Internet applications.

11- employ advanced databases (MySQL) in designing web sites to solve life problem.

12- Use PHP programming language in producing software and web site to express his/her thoughts.

13- evaluate web sites and information resources in terms of accuracy and credibility in the light of specific criteria.



Dear student

Producing the "Computer Terminology Dictionary" project passesthrough a number of stages as follows:

Stage (1)
Designing Web Pages

↓

Stage (2)
Creating Database Tabels

↓

Stage (3)
Creating Web Site Pages

Each Stage contains several skills and through your study and practice, you can implement the project.

The First Topic

Design Web Pages



Learning outcomes

By the end the topic, students are expected to be able to:

1- design the home web page for the Computer Terminology Dictionary site.

2- determine the necessary navigation links between pages of the site.

3- discuss with his collogues several proposals for the design of the project pages.

Design web pages stage

This is the first stage of the implementation of the project, in which the project' web pages, the name of each page, the purpose, and its content will be determined. Also we will define a proposal for designing the main page components and the Hyperlinks used in web pages navigation and return back to home page.

Good design of the site before the beginning of creation, it saves time and effort, also helps in producing special and professional site.

The following figure shows a proposal for designing "Photographer Computer Terminology" Dictionary site' pages.

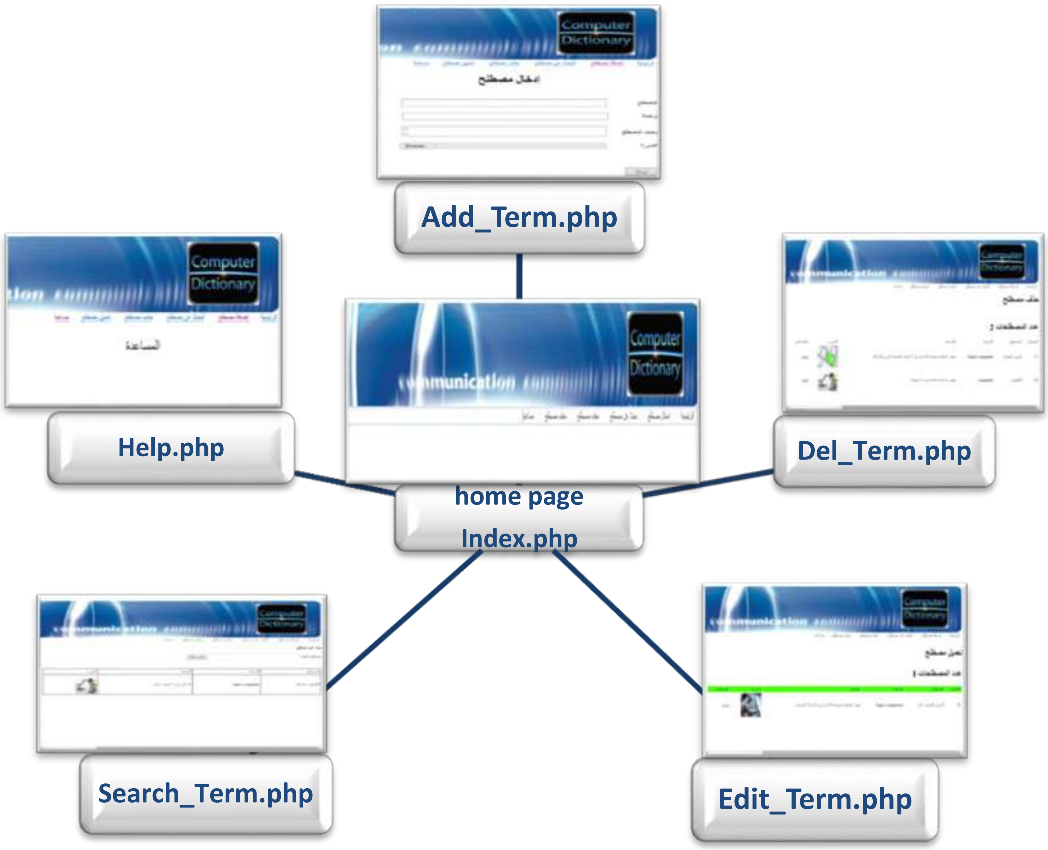


Figure (5) scheme of "Photographer Computer Terminology" Dictionary site' pages.

The following table shows "Photographer Computer Terminology" Dictionary site pages and its purpose and description.

No	Page Name	Purpose	Description	Page Design
1	**Home Page** **Index.php**	**To activate the links which can navigate between the site web pages**	**It represents the start page that appears when the user downloads the site, and by which they can move to the rest of the pages of the site.**	
2	**Data Base Connection Page** **Connection.php**	**To achieve connect to the database, where it will be retrieved before dealing with the data.**	**This page does not appear in front of the user, but it has been separated in order to limit typing code to one –line code achieves connect to the database at the beginning of each page rather than repeat the entire contact database code.**	PHP Code To connect Database

No	Page Name	Purpose	Description	Page Design
4	**Site Header Page** **Header.php**	**To show Banner picture and Hyperlinks Which they take us to all pages of the site where they are called at the beginning of each page.**	**This page contains fixed parts that need to be shown in all pages of the site, it so have been separated in a separate page, and is retrieved through one line code writing at the beginning of each page.**	
5	**Adding Term Page** **Add_Term.ph p**	**To add term and all its data in the terminology database table.**	**Independent Page, in which we write code to call the page header.php and another code to call page connection.php so that it can add a new record to the database.**	

No	Page Name	Purpose	Description	Page Design
6	**Searching Term Page** **Search_Term.php**	**To search term in the terminology database table.**	**Independent Page, in which we write code to call the page header.php and another code to call page connection.php so that it can search for a term in the database.**	
7	**Editing Term Page** **Edit_Term.php**	**To edit or update term data in the terminology database table.**	**When you make a modification term data we choose the term you want to modify it, and then make the necessary adjustment and save.**	
8	**Deleting Term Page** **Del_Term.php**	**To remove or delete term data from the terminology database table.**	**You can delete a term that was chosen.**	

No	Page Name	Purpose	Description	Page Design
9	Helping Page Help.php	**To view information about the site and its controllers.**	**Usually what we find in most of the sites where the About Us page displays information about the location, the methods of communication such as phone , address, e-mail , address pages on social networking sites … etc.**	

Note: To avoid writing code in all the site pages are as follows:

1. **Separate the image Banner and Hyperlinks in a separate page that is called in The beginning of each page .**
2. **Separate connect code to the database in a separate page that is called at the beginning of each page.**
3. **Image that appears at the beginning of each page called Banner**
4. **All Hyperlinks that we use to navigate between pages of the site are:**

(Main – Add term – Search term –Edit – Delete – Help),

This requires repeat the code for image and links to all pages of the site which represents a significant burden and should want to avoid a repeat, by separating them on one page that is called in the rest of the pages.

There are many applications or ready-made programs in which we can create a project-specific web pages quickly and easily, that is what we will be implemented in the following stages.

After selecting the site pages, we have to determine the structural architecture of the database,

Which will be explained in the second stage of the project (next topic)

Practice (1)

"Design a Scheme of site pages"

Book of activities and exercises Page 23



Practice (2)

Design a Scheme of "Photographer Computer Terminology" Dictionary site pages

Book of activities and exercises Page 25



The Second Topic

Create a Database



Learning outcomes

At the end the topic, students are expected to be able to:

1- recognize some basic concepts related to databases.

2- create a database of the project "Photographer Computer Terminology Dictionary".

3- practice linking databases operations.

4- classify the relations in databases.

5- cooperate with his colleagues in the creation of database tables.

Create database tables Stage

The second stage in the construction phase of the "Photographer Computer Terminology Dictionary" project database, and before starting, must be identified on some of the basic concepts of databases.

1- Database:

The database is a store or save a set of structured data associated with a particular subject in order to restore it to make decisions. The Relational Database is one of the types of databases that rely on the division of the data in Tables with determining relationships between these tables.

2- Tables:

Table represents infrastructure or the main component of the database, and consists of Records and Fields such as: data table for student or an employee or product … etc .

Fields (Columns)

Records) (Rows

Student name	Gender	Governorate	Birth date	Tel.No
Mohamed	Male	Cairo	1/1/2000	
Sama	Female	Giza	5/2/1999	
Fatima	Female	Cairo	3/4/2002	
Youssef	Male	Giza	11/5/2001	
Heba	Female	Sharkia	6/7/1998	

Figure (6) Example for Student table

From the previous table, we conclude the following concepts :

Records:

A row of data table containing all the data for only one person or one case, and the record consists of several data fields (student or an employee or a particular product).

Fields:

Field is the infrastructure that makes up the data table, any column in a table is a field, and the field contains only one statement for each record of the table records.

Each field has many of properties including:

- **Field Name:** Such as Student's name, Governorate, Salary, Quantity…etc
- **Field Data Type: may be :**
  - **String: Such as Name or Address..**
  - **Numeric: Such as Degree or Salary..**
  - **Date:Such as Date of birth …and so on.**
- **Field Size :**

  It is the number of digits or characters in the case of the text field, or select the type of numbers entered in the case of the numeric field (Integer – contains a Decimal – ……. etc) .

It is worth mentioning that:

- You can create database that consists of only one table containing all the necessary fields and in this case the table is called "Flat Table".

- We usually separate the fields that share a common factor and put them in a single table, and thus database contains more than one table.
- **This matter requires creating relations between the database tables to each other, so as to avoid duplication of data or fields, and in this case the database is called Relational Database.**

To ensure the success of the linking process between database tables, you must achieve the following:

(1) Set a "Primary Key"

Set a "Primary Key" field for each table, and that by one of two ways:

- **Select a field from the table fields: the requirement will not be repeated any statement in this field at all, even with the huge volume of data.**

Or

- **Add a new field: it is set or allocated as a Primary key field.**



Practice (3)

"The basic concepts of databases"

Activity book Page 26

Study the following table and discuss with your classmates and your teacher what considered.

Student name	Gender	Governorate	Birth date	Tel. No
Mohamed	Male	Cairo	1/1/2000	٢٤٦٨
Sama	Female	Giza	5/2/1999	٨٧٨٨٧
Fatima	Female	Cairo	3/4/2002	٣٢٣٢٣
Youssef	Male	Giza	11/5/2001	٥٤٥٤٥
Heba	Female	sharkia	6/7/1998	٦٥٦٥٦

And it is clear that the fields that can be repeated its data, are not applicable to be a primary key field, so you must add a new field to become the primary key for the table, such as the student serial number or the student ID, so devoted a special number to each student that characteristic his data for the rest of the table records.

(2) Determine the types of relationships in databases

Determine the types of relationships in databases, the concept of each type, and how you can link the two tables, which will be addressed in some detail.

Types of relationships in databases

- First Type: **One to One**
- Second Type: **One to Many**
- Third Type: **Many to Many**

First Type: One to One:

A Relationship between two tables, where you can join a record in the first table with only one record of the second table, and vice versa.

Example (١)

Student data table

St. no	Name	Date of birth	Nationality	Address	Tel. no
١	Hany	1/1/2000	Egyptian	Cairo	١١٢١٢
٢	Aml	2/2/2001	Egyptian	Giza	٥٤٦٦٣
٣	Walid	3/3/2002	Egyptian	Quina	٩٩٨٧٧
٤	Samar	4/4/2003	Egyptian	Aswan	٥٥٨٨٩

Student status table

St. ID	Grade/ Class	Year	Status
٣	2/1	٢٠١٦	Pass
٤	2/3	٢٠١٦	Pass
١	2/5	٢٠١٦	Pass
٢	2/6	٢٠١٦	Remain

PK —— PK

Figure (7) shows the head to head relationship between two tables

Of the figure (7) Note:

The joining between the two tables by one-to-one relationship is linking the primary key field in the first table "Student number" with the primary key field in the second table "Student ID", pay attention that the primary key fields in the two tables must be:

(1) **The same Data Type.**

(2) **The same size.**

Note:

- Do not require to be the primary key fields in the two tables have the same name.
- The application of the database does linking the record of student Number (1) in the first table with the record of student ID (1) in the second table, and so on for the rest of the records even if the introduction of the records in the two tables in a different order, the important thing is the linking fields have identical content.

For example, it can be concluded that student no (2) in the classroom 2/6 and her school status is "Remain".



Practice (4)

"One To One" relation between two tables

Book of activities and exercises Page 28

Example (2)

Classes Table

Leader Teacher Code	Class Address	Class Code

Teachers Table

Tel. Number	Address	Teacher Name	Teacher Code

Foreign KeyFK No duplicate

Primary KeyPK

Join Field

Primary KeyPK

Figure (8) shows the head to head relationship between two tables

Of the figure (8), We note that identifies only one leader teachers for a class, which links the teacher code field (PK) in the table of "teachers" with the foreign field leader teacher code (FK) in "classes" table to be adjusted leading On Field Properties a non-repeatable "Index No Duplicate".

Note:
Called leader teacher code field (FK) a "Foreign Key", because it is not of the nature of the table and it is considered an outsider field.



Practice (5)

"One To One" relation between two tables

Book of activities and exercises Page 29

Second Type: One to Many

A Relationship between two tables so that you can join a record in the first table with numerous records in the second table and not vice versa.

Example:

Many Table

Class No.	Division	School Year	Student Number
١٠١	Scientific	٢٠١٦	٣
٣٠١	Scientific	٢٠١٦	٤
١٠١	Literary	٢٠١٦	١
٢٠١	Scientific	٢٠١٦	٢
٢٠١	Literary	٢٠١٦	٥
٣٠١	Scientific	٢٠١٦	٧
٣٠١	Literary	٢٠١٦	٩
١٠١	Literary	٢٠١٦	١٠
١٠١	Literary	٢٠١٦	١٢

Foreign Key FK (Class No.)

Primary Key PK (Student Number)

One Table

Class Location	Class Name	Class No.
First Floor	First	١٠١
Second Floor	Second	٢٠١
Third Floor	Third	٣٠١

Primary Key PK (Class No.)

Figure (9) illustrates one to many relationships between "classes table" and "students table"

Consider the previous figure and discuss with your colleagues the following :

(Clarification with examples of records from tables)



1. Are there more of students belong to the same class?
2. Do one of the students belong to more than one class?
3. What are the student's numbers in class 301?

Note of figure (9) as follows:

- The relationship between the tables "Class" and "students" is one "to many relationship" in terms of class table, where we find that every record in the "Classes Table" is Linked with many of the records in the "Students table" that is, per class, there are many students while the student Linked to only one class.
- To do link between the two tables in the one –many relationship should be added the primary key field in the table **One**(" classes table") to table Many("students table"), it is called in this case "a foreign field" (**Foreign Key**) because it is not of the nature of the table, but it outsider field.
- In the foreign key field (the class number in students table), data can be repeated, and called **Controlled redundancy**.
- That each record in the "Classes Table" is associated with numerous records in the "students table".
- The application of the database linking every record in the head table **One** "classes" with students records that have the same class number in the foreign field in the table **Many** "students".



Practice (6)

Conclusion one -many relationship between two tables

Book of activities and exercises Page 30

Third Type: Many to Many

A Relationship between two tables where one or more rows in a table are associated with one or more rows in another table.

Teachers Table

Subject	Teacher Name	Teacher No.
Computer	Ahmed	٣
English	Mona	٤
Arabic	Aml	١
Math	Omar	٢
Art	Hanaa	٥
Sport	Sherin	٦

Primary KeyPK

Class Table

Class Location	Class Name	Class No.
First Floor	First	١٠١
Second Floor	Second	٢٠١
Third Floor	Third	٣٠١

Primary KeyPK

Joining Table

Teacher No.	Class No.
١	١٠١
٢	٢٠١
٤	٢٠١
٥	٢٠١
٥	٣٠١
٦	٣٠١
٣	١٠١

Fields of class No. and teacher No. together a

Composite key In the joining table

Figure (10) shows the many – many relationship between the "class table" and the "teachers table"

Consider the previous figure and discuss with colleagues the following: (with illustrative examples of records from tables)



1. Do more than one teacher teach in the same class?
2. Does a teacher teach in more than one class?
3. Select the teachers who are teaching in class No. 301?
4. What classes that taught by the teacher's No. 5?

Note of figure (10) as follows:

The relationship between the "Class table "and "Teachers table" is many – to-many relationship, where we find that every record in the "Class table" can be associated with many of the records in the "Teachers table", and any record in the "Teachers table " can be associated with numerous records in "Class table", meaning that one class can be taught by more than a teacher, and the teacher can also be the one who teaches in more than one class.

Subject	Teacher Name	Teacher No.
Computer	Ahmed	٣
English	Mona	٤
Arabic	Aml	١
Math	Omar	٢
Art	Hanaa	٥
Sport	Sherin	٦

Class Location	Class Name	Class No.
First Floor	First	١٠١
Second Floor	Second	٢٠١
Third Floor	Third	٣٠١

- Before doing the link between the two tables in a relationship many – to–many should create a new table that contains the primary key field "Class number" of the "Class table", and the primary key field "Teacher number" of the "Teachers table", and assign that two fields together is the composite primary key in the linking table.

Teacher No.	Class No.
١	١٠١
٢	٢٠١
٤	٢٠١
٥	٢٠١
٥	٣٠١
٦	٣٠١
٣	١٠١

- Many–To–many relationship is a theoretical relationship of concepts of databases, and cannot be represented practically in database management programs such as Access – Oracle – MySQL … etc.
- So the relation was broken into two relationships:

The first: one-to-many relationship between "Class table" and "linkage table" so that the head is a "Class table", and the parties (many) in terms of connectivity "linkage table".

The last: one-to-many relationship between "Teachers table" and "linkage table" so that the head is a "Teachers table", and the parties (many) in terms of connectivity "linkage table".

From the above it is clear that:

- **Data cannot be duplicated in the primary key field in the "Class table ".**
- **Data cannot be duplicated in the primary key field in the "Teachers table".**
- **You cannot repeat the teacher No. and class No. together in the linkage table because they together represent a composite primary key as shown on he figure.**
- **Each class in the "Class table" can be taught by many of the teachers, and each eacher can also teach in more than one class.**



Practice (7)
Conclusion Many-to- Many relationship between two tables
Activity book Page 32

Using one of Database management system **applications in creation of the database, such as:**

Oracle or MS Access or MySQL

We will use the application MySQL where it is free application (Free Ware), an Open Source; it is allowed to deal with the huge amount of data used by major international companies, especially in the field of information technology such as: Google, Yahoo and Friendster. And for more information about some of the companies that use MySQL you can visit the following location:

http://www.mysql.com/customers/

Typically the applications used in database management system include basic Objects such as:

- **Tables:** through which we can create database tables containing records and fields, and the possibility of entering, displaying and modifying the data.
- **Queries:**

  Query is a request for information from a database for the purpose of data or information in the tables, displays the required data, and through query can display some fields from a table or display some records from a table or more based on a certain condition … etc.

  To create a "Photographer Computer Terminology" project database by using application MySQL, follow the procedures following activity:



Activity (1)
Create a database using MySQL
Activity book Page 33

This activity is a mentor that enables you under the supervision of your teacher creating of any other tables in the database depending on your needs by the following characteristics:

Project database properties :

Database Name: dbdictionary

Data Table Name: **Terms**

And includes a total number of five (5) fields, as shown in the following table:

Table: Terms				
#	**Name**	**Type**	**Length values**	**Index**
1	Id	Integer	11	Primary
2	Term	VarChar	50	
3	Trans	VarChar	500	
4	Defe	VarChar	5000	
5	Picture	VarChar	300	

Note:

In the "Photographer Computer Terminology" project construction, it has been created database consists of one table to be simple.

Activity (2)

Data entry in table "terms" using MySQL

Activity book Page 39



Unit 3

Creating Site Pages of "Illustrated Dictionary of Computer Terms".

By the end of the unit students will be able to:

1. Employ some of the e-learning tools in the production of his project.
2. Employ information and communication technology applications in the construction of educational content.
3. Employ one of applications of creating website in linking Web site pages.
4. Employ appropriate applications in processing multimedia elements (audio – video–image…)
5. identify HTML language and PHP and its applications in web design.
6. practise dealing with electronic information skills (identifying – evaluating – selecting – organizing.)
7. employ electronic information sources associated with a specific project in the implementation of the project.
8. learn some of the transactions related to PHP language.
9. learn some of the concepts and formulas related to the IF and Switch statement.

First topic

PHP&HTML languages and applications of designing web sites



Learining Outcomes:

By the end of the topic studentS will be able to:

1- Practise steps of creating a site using the application Expression Web.
2- know HTML markup language.
3- create Web pages with HTML code.
4- explain the main screen components of the program Expression Web.
5- link between Web pages with code.
6- earn the PHP programming language.
7- employ Expression Web program in linking Web site pages.

Setup files and folders project procedures:

1-Create a folder for the project named "Dictionary" inside the folder htdocs.

Before you begin creating web pages, we need to organize files of various types that will be displayed on the pages of the site, which should be in one folder, which contains subfolders for the classification of files that are displayed on the pages of the site, and they are categorized into a folder of image files and folder for video files ... etc., and thereby create a repository Information project.

Notice:

When you Install XAMPP, by default, this is done within a folder named XAMPP on the CD player C: and has a set of folders, including a folder named htdocs, and the project should create a folder named "Dictionary" inside htdocs folder then the track becomes as follows:

C:\xammp\htdocs\dictionary

It is the path that you will use to save the project files, and save subfolders of the site and publish them as a site on the (Server) Localhost.

2-crteate web pages:

Dear Student, remember that we are in the process of visualizing a proposal for the project, where we previously identified pages that will be created in the proposed site (location) pages, namely:

	● **Add term page:** "**Add_term.php**" **Which is used to add a new term.**
	● **<u>Search termPage:</u>** "**Search_term.php**" **The term used in the search for and view its data.**
	● **<u>Edit term page:</u>** "**Edit_term.php**" **Through which we can modify any statement of a particular term.**
	● **<u>Delete term page:</u>** "**Del_term.php**" **through which you can delete a certain term.**



● **Help page:**

"**Help.php**"

Information on how to deal with the site "Illustrated Dictionary of Computer Terms.

● **Connection.phppage " to open a connection to the database on the server machine.**

● **Header.php page contains the following:**

1. **Banner that is displayed on all pages of the site.**
2. **Hyperlinks Hyperlinks to all pages of the site.**

● **Home "" Index.phpdisplays site interface:**



Due to the seriousness of the processes of the modification in the term data or delete it from the site, this authority has been granted to the user who is logged entry only, which will be implemented in the phase of securingthe site in the fifth unit of this book, and so the user who logged in should be logged out from the site, after the end of his/her interaction with the site "Illustrated Dictionary of Computer Terms".

Whatever the application used to create web pages is, it depends on the use of HTML coding language, so we address the most important information and basic skills in HTML coding language and application Expression Web, to help create the site pages.

"Hyper Text Markup Language"HTML

It's a coding language used to create Web pages that saved with the extension of the .htm or .html so that it can be displayed. Its code can be translated translate through one of the Web browser programs.

And thus you can write HTML code using a word processing programs, such as:

(**MSWord**, **WordPad**, **Notepadand** ....)

Bearing the following in mind:

- The command written in HTML coding language is called Tag, it is possible to be written in capital or small lettes letters.
- To write the code according to a specific figure as follows:

The structure of a program in HTML

```
<html>
  <head>
    <Title>عنوان صفحة المعلومات</Title>
  </head>
  <body>
    المعلومات التي ستعرض على مستعرض الإنترنت
  </body>
</html>
```

Figure (11) illustrates the Structure of HTML

Study the previous figure and try to deduce the characteristics of HTML markup language:

The characteristics of HTML coding language:

1. **Tags commands in the markup language HTMLare placed between two brands<>**
2. **Most of the Tags have a beginning or open <... ..> and an end or close<.. ... />**

As follows:

<Tag>
The text is affected by the command
</Tag>



Figure (12) the general figure of the Tag in HTML markup language

Notice the following:

- Each tag has a certain task to perform.
- Some tags don't have a close or an end such as
.
- Some Tags don't have properities that can be assigned at the beginning of the Tag.

3. The code begins with <Html> and ends with </ Html> the following is between them:

<Head></Head>	**It is used to display information such as: a description of the site and the code writer and language ... etc.**
<Title></Title>	**It has a regard for writting the title of the web page and appears in the Title Bar of screen Internet browser is part of the Tag <Head>.**
<Body></Body>	**We Keep all types of information to be displayed on the Internet browser page of text and effects on which the photos, videos, audios, tables and links (... etc) occur.**

4. **summary of what the main sections display of the HTML code:**

The beginning of the Tag		The end of the Tag
<HTML>	**All page contents**	</ HTML>
<HEAD>	**Page heading**	</ HEAD>
<TITLE>	**Page title**	</ TITLE>
<BODY>	**Page content**	</ BODY>

Figure (13) Summary of the main sections of HTML

- ## Save markup language HTML code:

To save the HTML code in a file you should bear in mind the following:

1. Save the file in any HTML code name with the extension .htm or .html.
2. A text file type TEXT, and you should use Notepad program because it saves the file in this type directly without seecting this.

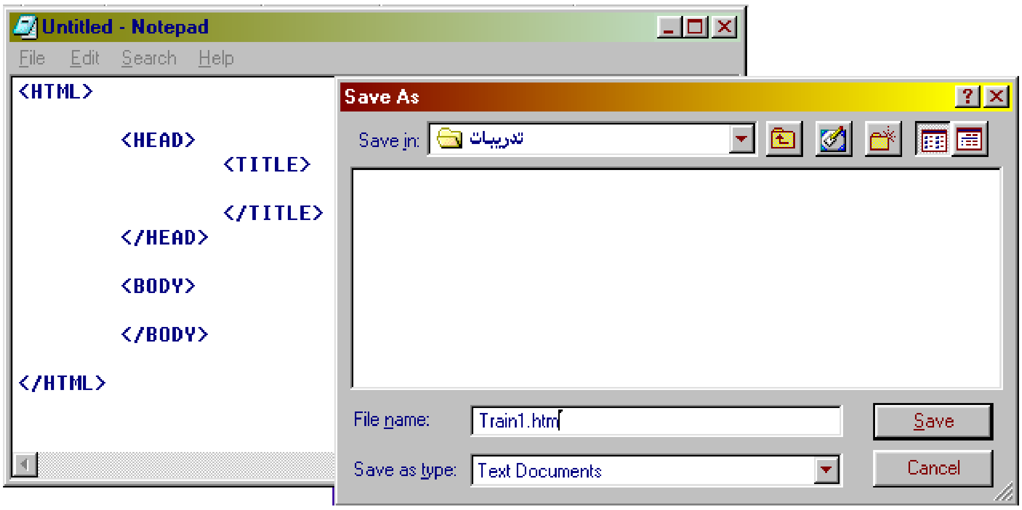


Figure (14) saving the structure of the written program in HTML Notepad

After saving the file with the previous specifications, it takes Internet browser code available on your coputer, such as:

InternetExploreror**GoogleChrome**or**MozillaFirefoxEtc…**

- **A file icon in the** 

case of Internet Explorer.
- **Discuss the form of the file icon with your teacher and classmates in case there is more than an Internet browser on your computer.**

Activity (1)

Creating a Web Page named Test1.html" using HTML code

Under the supervision of your teacher follow the procedures workbook page (34)



study activity code:

code HTML in file test1.html

Test1.htm - Notepad

File Edit Format View Help

```
<HTML>
      <Head>
           <Title>
                  My First Web Page
           </Title>
      </Head>
 <Body>
         الكمبيوتر التعليمي
         <p align = "Center">
          <img src = "Egypt.jpg">
          <H1> تحيا مصر </h1>
         </p>
         <p align = "right"> الصفحة الثانية </p>
 </Body>
</HTML>
```

The following table contains an explanation of some of the HTML code used in the activity; discuss the parts of the code contained in the following table with your teacher and classmates:

Code	Explanation
<Title> My First Web Page </Title>	Adding webpage address
<Body>	Each text typed in the <Body> appears on the Web page, on the left as the default orientation for typing on the browser screen.
<p align = "Center">	CODE <P> A new paragraph, and align = "Center" feature means the alignment of the following text has been centered on the browser screen to close the Tag </ P>.
<imgsrc = "Egypt.jpg">	Img src means "Image Source" It's typed after the sign "=". It's the Path and name of the image file with the extension placed between double quotation marks.
<H1> Long live Egypt </ H1>	H = "Head". It means that the text, followed by the title and shows the size of the line according to the number that follows the letter H from 1 to 6, where 1 refers to the largest font size and line 6 refers to the smallest font size and so on. The words "Long live Egypt" is also in the middle of the line where <P> has not yet closed.
>p align = "right<" الصفحةالثانية </p>	Typing a text on the web page-with right alignment.

Activity (2)

Using HTML code to create web page with the name test2.html

Under the supervision of your teacher, follow the instuctions given in your activity book



Study the code of the activity:

كود HTML الخاص بملف test2.html.

```
<HTML>
        <Head>
              <Title>
                       My  Second  Web  Page
              </Title>
        </Head>

   <Body>
              إدخلوا مصر إن شاء الله آمنين
              <p align = "Right">
                <img src = "Egypt.jpg"
           height=50 width=100>
              الصفحة الأولى  </p>
   </Body>

</HTML>
```

Study the previous code, compared with the code in the previous activity, then discuss this with your teacher and classmates.



Dear Student, You can create a Web page or modify it by using multiple applications or software quickly and easily instead of typing HTML codes

Here are two ways to link between test1.html and test2.htmlweb pages:

Firstly, the link between web pages in HTML markup language code.

Dear student, after you create and test1.html test2.html Web pages using HTML markup language, you need to edit the Web pages and connect them through a text or an image, which you can do by modifying the code in the HTML markup language.

Activity (3)

Linking Web pages with code of markup HTML language

Under the supervision of your teacher follow the the instructions in workbook page (39)



Secondly: the link through one of the applications of creating Web sites

Dear student, you can also modify the Web pages and connect them through text or image using the application of Expression Web.

Expression Web can be loaded to create Web sites and pages through a user-friendly interface and simple application instead of typing HTML code as follows:

loading Expression Web program:

- **From the start menu, select the program Microsoft Expression Web 4 as** shown **in the following figures:**

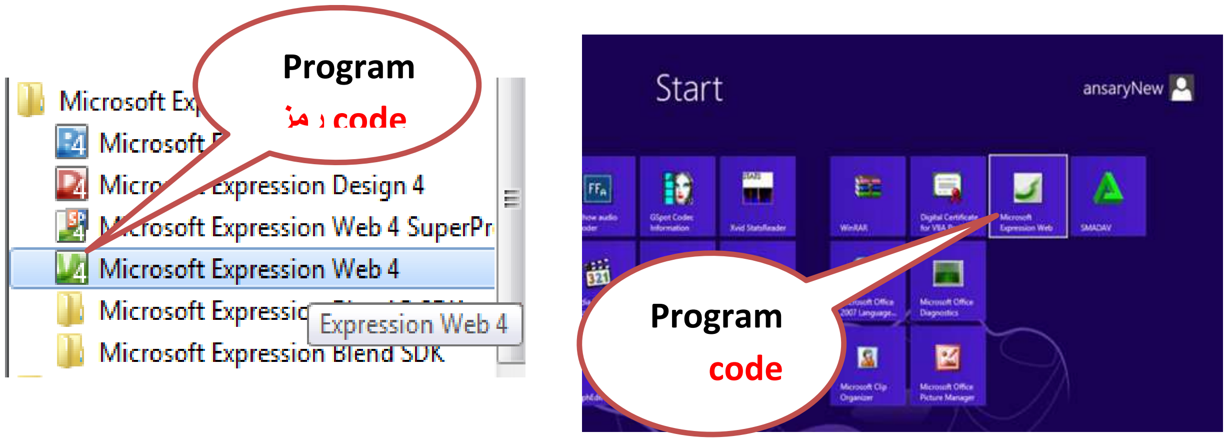


Figure (15) loading Expression Web

- The opening screen of the program is displayed whose most important components are:

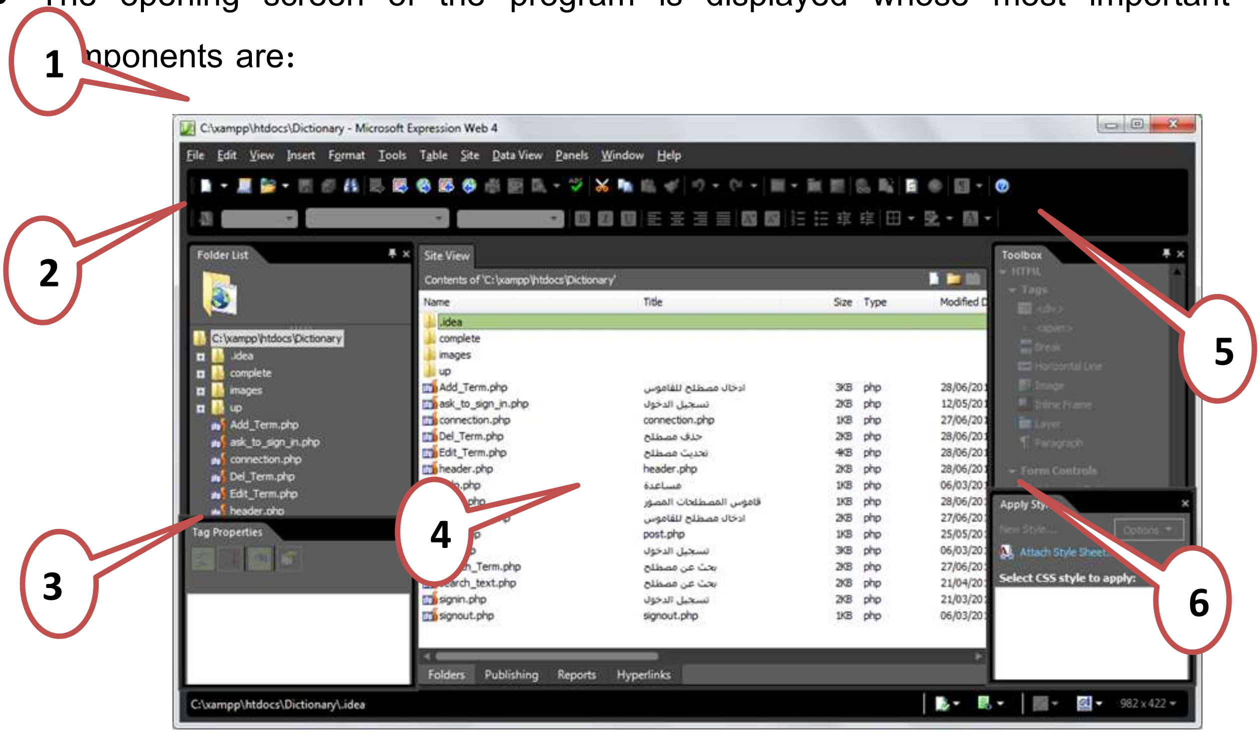


Figure (16) the main screen of the program Expression Web components.

(1) **MenuBar**.

(2) **FolderList**.

(3) **TagProperties**.

(4) **WebSitecomponent**.

(5) **Toolbox**.

(6) **ApplyStyle**.

- **The applications used to create Web sites and pages feature are characterized by (WYSIWYG) (" which Means: "what you see is what you get.")**

- We can display the code of the Web page HTML and modify it, for example, we can use the application to link Web pages through the toolbar by applying Hyperlink in a text or an image as a substitute to HTML code, which has already been explained:

```
<a href ="The title we need to move to ">
      Text or image to be linked to the title
</a>
```

- This is clear through the following activity:



Activity (4)

Linking Web pages using Expression Web program

Follow the instructions given in activity book P. 42

Creating the project site

Before creating any page of a site, we must create a site for the project using Expression Web program, and then set up all the pages as planned.



Activity (5)

"Create a project site using an application Expression Web"

Follow the procedures in activity book page (47)

Creating"Header.php"



Figure (17) "Header.php"

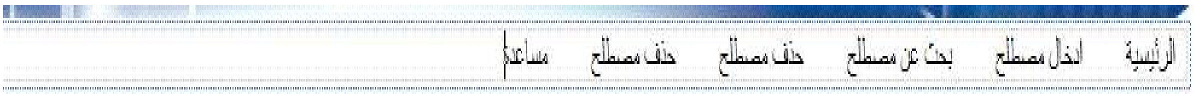
Study the previous figure, and select repeated parts on all pages of the site:

This page contains all repeated parts of the site pages as shown in the previous image namely:

- The image at the beginning of each page is called the Banner.



- The following texts: the main – the introduction of the term – search for the term – amendment – to delete the term – help.



Notice :

The previous texts are displayed on the screen browser just as words that aren't linked to the web pages; the aren't hyperlinks yet.

In short, "Header.php" page aims to insert an image and then type some texts that are separated by spaces, as displayed by the following code window:

Site View | header.php*

```
<html  dir="rtl">
    <head>
    <meta content="text/html; charset=utf-8" http-equiv="Content-Type">
    </head>
    <body>
        <div>
        <img  height='161' src='images/banner.jpg' width='1267' >
        </div>
      <div  style="width: 1256px;text-align:right"    >
       
      الرئيسية
            
      إضافة مصطلح
             
      البحث عن مصطلح
             
      حذف مصطلح
             
      تعديل مصطلح
             
      مساعدة
      </div>
    </body>
</html>
```

Sectio — **First section**

Section — **Second section**

Design | Split | Code

Figure (18) Window "Header.php"

In the code created we notice the following:

- The following <u>Tag</u> is used to create a section of the page as shown in Previous Figure:

```
<div>

    Code HTML of this section

</div>
```

First section:

It is related to inserting "banner" from 'images/banner.jpg with adusting the properties of height and width.

```
<div>
<img  height='161' src='images/banner.jpg' width='1267'>
</div>
```

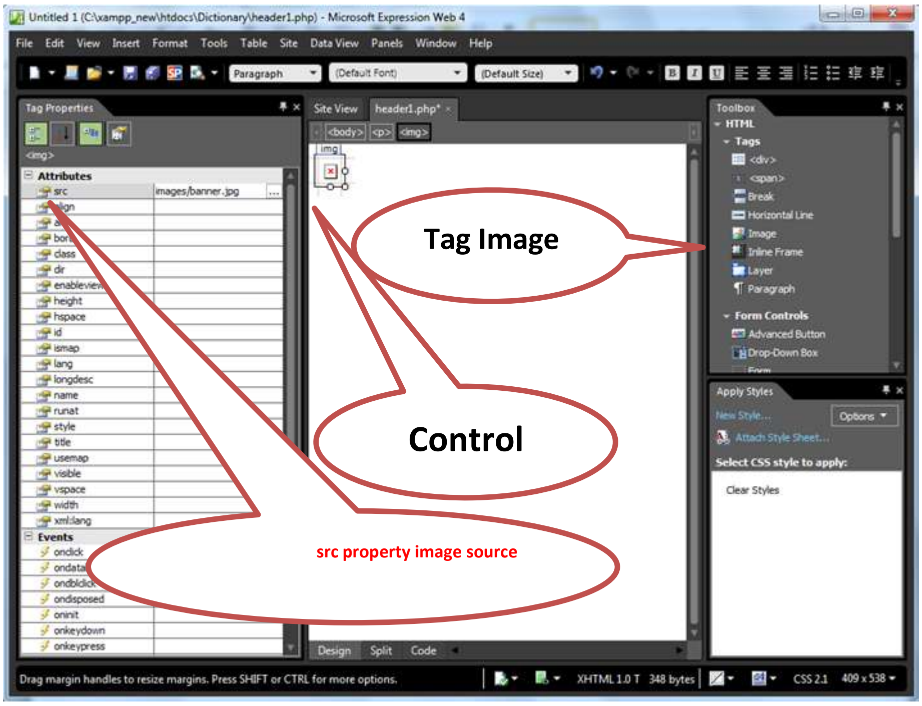


Figure (19) Banner creates images and adjusts their characteristics

Second section:

Some properties, of the display and adjust the alignment of the right hand, were set then we typed the names of the pages of the site, leaving some spaces to   code (an abbreviation that means "Non Breakable Space"). It helps in leaving one space as shown"

```
<div  style="width: 1256px;text-align:right"    >
 
الرئيسية
      
إضافة مصطلح
       
البحث عن مصطلح
       
حذف مصطلح
       
تعديل مصطلح
       
مساعدة
</div>
```

Figure (20) shows the private pages of the site code part

You can also create a "Header.php" page with HTML code language or one of the applications of creating Web pages with the following code:

```
<html  dir="rtl">
<head>
<meta content="text/html; charset=utf-8" http-equiv="Content-Type">
</head>
    <body>
        <div>
        <img  height='161' src='images/banner.jpg' width='1267' >
        </div>

        <div  style="width: 1256px;text-align:right"    >
        <a href="index.php">الرئيسية</a>
              
        <a href="add_term.php"> إضافة مصطلح
        </a>       
        <a href="search_text.php">البحث عن مصطلح</a>
               
        <a href="Del_Term.php">حذف مصطلح</a>
               
        <a href="Edit_Term.php">تعديل مصطلح
        </a>       
        <a href="Help.php">مساعدة </a>
        </div>
    </body>
</html>
```

Figure (21) code of creating Header.php page

From the study of the previous HTML code, you notice the following:

(1) Section <div> has been opened and </ div> has been closed and the code of insert the image that we want to be Banner put between them to. Then code No. 1 on the Figure appears at the beginning of all pages of the site code. (No. 1 on the Figure).

(2) The second section leads to the right of the coordination of the work of the alignment of all that followed, and even closing section, with Arabic texts making connections Hyperlink pages of the site. (No. 2 on the figure).

(3) The following code:

```
<a href = 'index.php'>main</a>
```

Refers to:

- The beginning of "Tag"

	-the beginning of the code is the inclusion of a hyperlinkto the title, "the page name." -Which follows "=". - Which may be a file name or the name of a program or Web page name or Internet address, etc ...

- The end of "Tag":

	hen we close the code with/>a.<

(4) nbsp& is an abbreviation that means "Non Breakable Space" It helps in leaving one space and six spaces after "main page" was written 6 times following each of them;

(5) By the the same idea, you can repeat the previous code with the word "main" with "insert term ", "search for the term", "Edit term" , "Delete term", then the word "help" each of them canwork as a hyperlink.

You can recall "Header.php" with a simple instruction at the beginning of each page.

You can create a header.php (page) using Expression Web program as follows:

Insert image, and type some texts underneath, and make some formatting, to show up appropriately.

Activity (6)

"Creating a Page Header type PHP in the design screen".

This is what you will do under the supervision ofyou your teacherin the activity book page (49)



We can linkeach below the Banner tothe pagerelated to it through the following activityactivity:

Activity (7)

"Creating hyperlinks to the pages of the site".



This is what you will do under the supervision ofyour teacherin the activity book page (50)

Create a contact page Connection.php database

We need to add a term or modify data, search for, or delete the term from the database in the"Illustrated Dictionary of computer terms" pages, which requires opening a connection to the database so that we can conduct these operations on the database data.

When you create a contact page databases, we need to deal with variables ،Which we will shed light on before the creating the contact page databases:

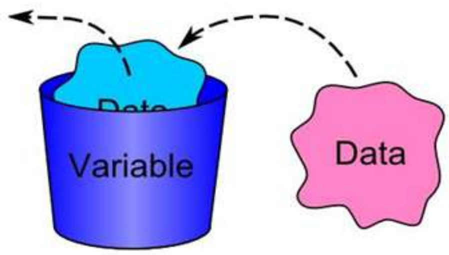
Variables and constants in the language of PHP:

Dear Student, you've studied the concept of variables and constants in prepstage, and the concept is no different than previously studied, but let us take some of the spotlight from the perspective of PHP language.

Changes in the language of PHP:

- **A Variable is storeroom in the memory that has a name and typefor which we allocate a value to be stored in, and its value is changed during the course of the program. For example, if $ the Total variable is equal to 100, it can replace the value that was allocated with another in the language of PHP, with the following:**

```
$Total = 450;
```



Notice the following:

- **We announc the variable when it is used.**
- **Variable name begins with an."$"**
- **Variable name consists of letters, numbers and sign "_" only, such as:**

  $user_name - $A123 - $Password....etc.
- **Variable name should express its content or what it refers to.**
- **Assignment sign is "=".**
- **Each sentence ends in PHP sign language;**
- **-To print any information on the browser screen use Print or Echo,as follows:**
  - **print $total;**
  - **OR echo ("$total");**

–Echo Code can be used to assemble more than a fixed or variable on printing on the browser screen and then separate them by a dot"." .

There is another version to print the value of the variable as shown in the following example:

```
$name="Mohamed";
echo "my name is $name";
echo 'my name is $name';
echo 'my name is  ' .$name;
```

When you excute the previous code to have its result on the Internet browser screen as follows:

```
my name is  Mohamed
my name is $name
my name is  Mohamed
```

After executing of the previous code, we notice the following:

- In the first printing, we printed the variable value when placed inside the "Double quotation." quotes
- While the variable between the 'Single quotation' quotes was regarded as text printed as follows: my name is $ name.

•In the third printing phrase,we used dot to print a literal series and the value of the variable.

You can review some types of variables in the language of PHP through the following table

Type	Kind of data	Example
String	literal	"Mohammad"
Integer	Whole number	123
Double	decimals	1.23
Boolean	Rational number Or:Boolean	True / False

- It is worth mentioning that we don't not display variable kind in the language PHP, but Apache displays (recognizes) the type of compiler through the valueallocated to the variable in the customization phrase.
- For example: You may know the type of any variable using the function "get" type ($ var); That follows CODE:

```
<?php
 $U_name="mohamed";  // Variable equal to a literal value
echogettype($U_name);         // print variable type
echo "<br />";                // move to next line
echo "Welcome to PHP";        // Print a welcome message in the PHP
    language
echo "<br />";                // move to next  line
echogettype($test);           // print another unselected variable type
?>
```

We notice that:

The output implementation of the code printing variable "$ U_name" on a page Internet browser is "String". Leave line and print a welcoming message "Welcome to PHP", then leave line and print any Null which means that the variable value is empty due to non-allocation of value to it.

PHP constants in the language:

The constants are stores in memory bearing the name and type with an assigned fixed value that does not change throughout the implementation of the program, and can be defined by the following general formula:

```
define ('Constant Name', Value);
```

Where:

- **Constant Name refers to a hard name.**
- **Value represents cutomized value to ....**

With a note that we do not put $ sign in front of a hard name when we use it, but it is defined.

For example:

```
define('name', 'Mohamed');

echo('my name is:  '. name);
```

- **We use a (.) In the second line of the code to link the two literal series.**
- **We used the constant without the $ sign.**
- **Define"is used to define constant.**
- **Each line in PHP language ends with a semicolon;.**

When you execute the previous code, its result on the Internet browser screen is as follows:

my name is: Mohamed

It is worth mentioning that the variables and constants are affected by the status of large or small letters(Case-Insensitive), and if you want the constant to be not sensitive to the case of letters, use the following formula:

```
define('Constant Name', Value, true);
```

It's necessary to make sure that:

(1) PHP code is written in accordance with the following:

```
<?php
        PHP code to be executed
?>
```

(2) CODE <? PHP announces that the following code is a Script language PHP will be executed on the server machine through Apache Server.

(3) **Printing code on the browser screen in the language of PHP:**

```
Echo ("
    Content to be printed on the browser screen or any HTML Code
    HTML
");
```

(4) each sentence in the language PHP must end with a semicolon Semi Colon " ; "

(5) Typing a comment in PHP code without being translated or executed before the sign."//"

(6) As to type a note or a text of more than one line, you should type a comment or notes in full preceded by "/ *" At the end of the note put the mark."/ *"

Dealing with the database data dictionary:

After you create the database dbdictionary containing computer terms in the Terms table, we will deal with the spread sheet records through the site "Dictionary Illustrated terms" pages, where we can through the various pages, add the term to the database or search for the term or modify any statement in it or delete the term, and all these processes mainly need to create and open a connection between the database and the pages of the site, so before you execute any of these transactions, we will begin to create a page containing PHP code that you can connect to the database so that it can be called at the beginning of each Web based page one of the updates in the database.

Site View | connection.php*

```
<?php

    $username="root";

    $password="";

    $database="dbdictionary";

    $server="localhost";

    $connect=mysql_connect("$server","$username","$password");
    if ($connect)
        {
        $select=mysql_select_db("$database") or die("هناك مشكلة فى قاعدة البيانات");
        }
        else
        {
        echo("لم يتم الاتصال بقاعدة البيانات");
        }

?>
```

Figure (22) connect to the database code

Through considering the previous code, we notice the following:

- **The beginning of the code<?php**
- There are four basic requirements to connect to the database:

Server device – the user name – name and password – the database name.

Notice: (user – name and password)

Code	Explanation
؛"username="root$	MySQL user name is assigned to the variable $ username
=$password؛""	The default password is assigbed to the variable $ and it should be changed as we will study in the fifth unit.

- Notice(database name)

Code	Explanation
$database="dbdictionary";	The database name is assigned the variable $ database

- Notice (server name)

- code	- Explanation
- $server="localhost";	- "localhost" of the database is assigned to the variable $ server

```
$connect=mysql_connect("$server","$username","$password");
```

−The purpose of the previous code is to customize the result of executing mysql_connect that needs to be three data function:

(Host server device name − and the name of the user − and password.)

To the variable $connect, where it is the result of "True" if wevalidate the previous three data, or "False" if it is not so, and to make sure that we use the following IF phrase:

```
if ($connect)
        {
            $select=mysql_select_db("$database") or die
        ("There is a problem with the database");
        }
  else
        {
      Echo ("We haven't been connected to the database");
        }
```

Notice the following:

Asking about the condition value of the variable $ a connect, If the "True" it is connecting to a $−called data Database through mysql_select_db function or message if there is a display issue, through

The following code:

Or die(**"There is a problem in the database."**);

If the value of the variable $ a connect, "False" ,it displays the message that follows else on the web page that he "did not connect to the database".

The end of the code?>

Activity (8)

"Create a contact page rules connect.php data"

Activity Book page (52)





The second topic
Transactions and conditional sentences in PHP language

Learning outcomes:

The end of the topic, thestudentwill be able to:

1- distinguish between transactions Operator in the language of PHP.
2- explain If conditional in the language of PHP.
3- recognize inter Switch in the language of PHP.
4- employ different formulas of "If" phrases & Switch in solving problems.

Before you start creating a page to add the term, you can review together the concept of Operators, where there are three types in the language of PHP, namely:

Operators:

(1) Mathematical Operators of two types (normal – other).

Operator	Refers to	Example	Example outcome
+	Addition	3+2	5
–	Subtraction	6−4	2
*	Multiplication	5*2	10
/	division	8/2	4
%	Residual of division	10 % 3	1

(2) There are other marhematical operators to the PPH language , for example:

Operation	Example	Means
+ =	$x +=5	$x = $x + 5
− =	$x −=5	$x = $x – 5
* =	$x *= 5	$x = $x * 5
/ =	$x /= 5	$x = $x / 5
% =	$x % = 5	$x = $x % 5
++	$x++	$x = $x + 1
- -	$x–	$x = $x – 1

(3) compared operators:

Operator	==	!=	>	>=	<	<=
Refer to	Equal	Not Equal	Greater Than	Greater Than Or Equal	Less Than	Less Than Or Equal

(4) (5)Logical Operators : They are symbolized by the following table:

Operator	المعنى
||	Or
OR	
&&	and
AND	
!	نفى

An example of the use of the outputs of the logical operators:

X	Y	X || Y	X && Y	!X
True	True	True	True	False
True	False	True	False	False
False	True	True	False	True
False	False	False	False	True

IF Condition:

Among the IF condition, by which software developers can develop a particular condition and test it. If the result of the condition is true, the program can implement of specific code, and if the result of the implementation of the condition is not properly, it can carried out another code.

We can use an IF statement in different ways depending on the program requirements, and perhaps the simplest forminh which IF statement is used in PHP language is:

```
If (Logical Condition)
    {
  Code to be executed if the output of condition is true
      }
```

Where Logical Condition:

Refers to the conditional expression such as:

Degree> 50 or Age <6 or Name == "Administrator" … etc

As can be seen from the above examples and what you ever study, it is noticed that:

Condition compares two variables or variable and constantwhere we find one of the previous comparative operators between them.

In this case, if the condition isture, wecanonly implement the code in brackets { }.

For example:

```
<?PHP
        $A="First";
        If ($A=="First")
            {
                Echo "You first";
            }
?>
```

In the previopius example we notice that:

-]You first phrase:

  "Echo" will be typed on the browser screen if the value of the variable equal to $ A "First.

  - "=" –Sign in the code ($ A = "First";) represents:

Allocation operator, but the sign "==" with IF statmentrepresentsa logical OPERATOR (Equal).

With Each sentence in the language PHP ends:

Semicolon" ;"

The following patern of the IF statement is the most common

```
If (Logical Condition)
        {
          True الكود المراد تنفيذه إذا تحقق الشرط
}
Else
        {
          الكود المراد تنفيذه إذا لم يتحقق الشرط
}
```

So, it is natural that any condition may havea"True" result "True" . Then we can implement the code of verification requirement only after IF directly, the condition may be the result of "False" is executing the following code for Else only.

For example:

```
<?PHP
        $A="Second";
        If ($A=="First")
            {
                Echo "أنت الأول";
            }
        Else
            {
                Echo "أنت الثاني";
            }
?>
```

In the previous examplewe notice that:

- **<u>The phrase " "أنت الأول":</u>**

  Will be typed only on the Internet browser page if the only value of the variable $ A is equal to "First", otherwise it will print the words "أنت الثاني," Because the $ A = "Second", the condition is not true, therefore, the result of the full implementation of printing the code is ""أنت الثاني".

- **<u>The sign"=" in the code($A="First";)</u>**

  Represents the allocation operator but the sign"=="with the phrase If represents a logical operator.

- **<u>IF Code is fully considered one sentence.</u>**

The following is the most complicated one for If statments (If - Else If)

```
If (Logical Condition)
    {
        الكود المراد تنفيذه إذا تحقق الشرط الأول
    }
Elseif (Logical Condition)
    {
        الكود المراد تنفيذه إذا تحقق الشرط الثاني
    }
Else
    {
        الكود المراد تنفيذه إذا لم يتحقق الشرط الثاني
    }
```

We note that:

The first IF statement is followed by condition, if it is tue, the following code is executed directly and If not, there is a second codition, if it is executed, the code that follows Elseif is met.

Example:

```
<?PHP
        $X=5;
If ($X<0)
          {
               Echo "الرقم سالب"
  }
Elseif ($X>0)
        {
               Echo "الرقم موجب"
        }
Else
        {
               Echo "الرقم يساوي صفر"
         }
?>
```

Because the $ X5 has achieved the second condition after Elseif and the words "positive number" will be displayedon the Internet browser Screen.

Another style of the IF statemen.

(Expression) ? If-True : If-False;

The following example illustrates the use of the previous version, called InLine If:

```
<?PHP
$x = 1;                         // The variable is equal to 1
$y = ($x = = 1) ?'One' : 'Two';
```

The value of $ variable x I sselected, if its value is equal to 1, the value of "One is stored"

In the $ y variable and saves the value "Two" variable $ y.

```
Print $y                        // the variable value
?>
```

that in the previous example (:) Colon helped to write more than one sentence in one line

It led to the same result, instead of using braces.{}

Secondly: Switch statment

Be used as one of the conditional phrases in the language of PHP, from which a number of conditions arechecked and each time the condition excutesa specific code, and the following example illustrates this:

```
<?php
$x=1;
     switch ( $x )
     {
          case 1:
               echo "واحد";
               break;
          case 2:
               echo   "أثنين"
               break;

          case 3:
               echo '   "ثلاثة"
               break;

          default:
               echo "     لا"
               break;
     }
?>
```

Figure (23) PHP code illustrates the use of the switch conditional statement

By analyzing the following code we dind the following:

- **$x variable began with the value of 1, and then Switch statement is used to check the value of the variable $ x, where there are more than oneprobability**
  - If the value of the variable is equal to 1 ("case 1) "one" is typed and so on for the rest of the possibilities. In the last possibility if the value of the variable were not notequal to 1, 2 or 3 or less than this"no" is typed.
  - We can finish without doing anything by using "Exit", for example, in another case of Default, we can put the word Exi to Switch out of the sentence instead of printing "no".

Another formula for Switchstatment where " case " can take more than one value as the example below:

```
<?php
        $a = 2;
        Switch ( $a )
        {
            case 1:

            case 2:

            case 3:

            echo ' واحد أو اثنين أو ثلاث';
            break;

            default:
            echo 'أرقام أخرى';
        }
?>
```

Print in$a case is equal to 1 ٥ or 2 or 3

Figure (24) PHP code illustrates another figure for the use of Switch statement

This image is equal to the following conditional if

```
If($a==1  ||  $a==2  || $a==3  )
{
Echo '1 or 2 or 3';
}
```

This operator means: or

The third topic
"Add_Term.php" page



Learning outcomes

By the end of this topic students will be able do:

1- designe interface input page term.

2- write PHP code to include My Page Header & Connection.

3- creates a page of "enter the term".

4- ensure adding the term to the database.

(1)interface design input page term

Through one of the applications used to create web pages (such as Expression Web) you can create a page with the following design entry term: and save them to the location on your computer folder.

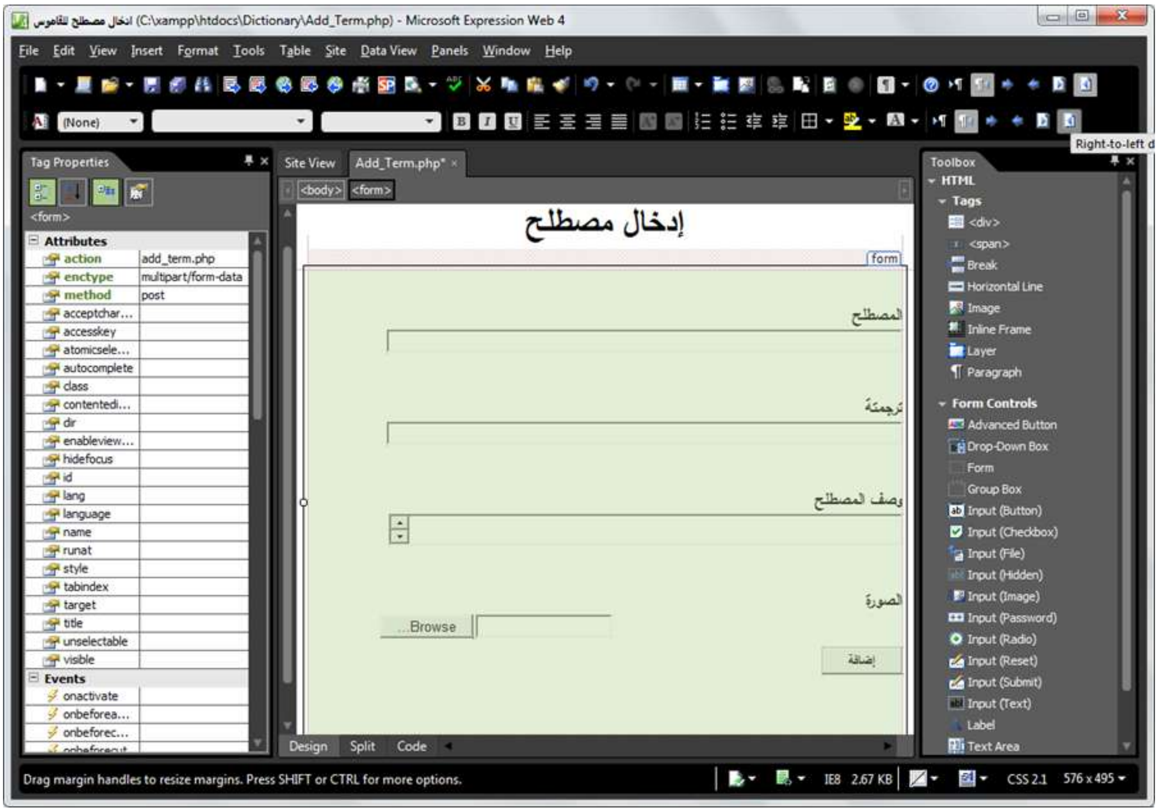
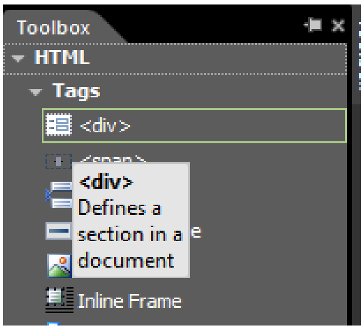


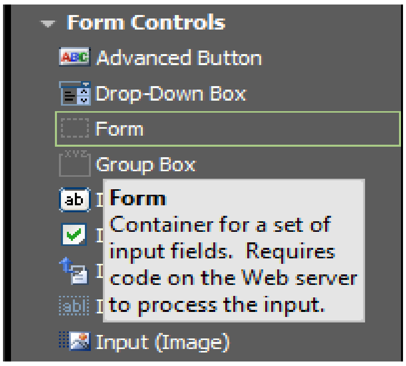
Figure (25) Add_Term.php Page design screen

For the implementation of the previous design in the design mode without writing code, we take into account the following:

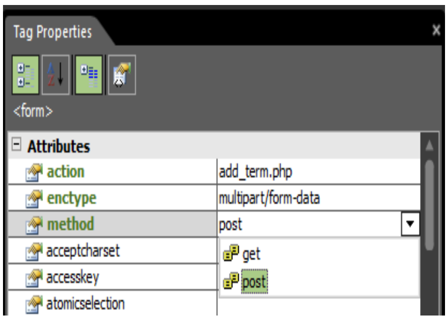
- Writing input screen assress "add term". This address has been put in a separate section <div>by inserting a section of the Toolbox tools as follows:



- Dear student, you can write texts as in the previous screen and the use of "Toolbox" on top right of the screen to insert the controls on the page.
- Inserting the Form of window tools as follows:



- The " Form " is used to pass or send all the form data in control tools of the Web browser to the WebServer. There are two ways to send the form data, namely:



١- <form method="GET">

٢- <form method="POST">

Where we can adjust Method property with the value POST or GET.

Figure (26) adjusting properties of Form

Some important differences between the values (POST) and (GET):

GET	POST
Transmitted data appear in the "URL" page address.	Transmitted data do not appear in the "URL" page address.
They are not used to send secret or any important data words.	They are used to send secret or any important data words.
It has a limit of the data used up to 7607 Character symbols.	Its Maximum data used is up to 8 Mb

Note:

You will know how to use it in the second term

If you look at the HTML code, you will find the beginning of the Form Tag as follows:

```
<form method="post" action="add_term.php" enctype="multipart/form-data">
```

From the previous formula, we find many of the properties of the Form where:

- The " Method" property has two values: GET or POST.
- The " Action" property : its value is the page name that we move to on clicking" Submit" button.

Some texts expressing the values that are inserted into text boxes are like:

The text "المصطلح" followed by text box to insert term name and so on with the rest to term data. The following Formula shows how to create text box in the internet browser.

```
<input name = "text_term" type = "text" style = "width : 482px">
```

From the previous formula, notice the following:

- " **Input" means inserting "control"**
- **name = "text_term" means "text_term".**
- **"type = "text" meansthe text box type**
- **"style = "width : 482px" means set text box property.**

- Add" button is responsible for the implementation of the code to insert the new term data in a data record in the "dbdictionary" data base.
- The rest of components page was put in another section <div>

To preview the **HTMLcode opposite** "add term" page described in the previous screen Select Form, then cick the "Code" button at the bottom window , the program code of this section is diplayed as in the following screen:

(1)
AddPHP code

(2)
AddPHP code

```
<html dir="rtl">
    <head>
    <meta content="text/html; charset=utf-8" http-equiv="Content-Type">
    <title>ادخال مصطلح للقاموس</title>
    </head>
    <body dir="rtl">

    <div style="text-align:center" > <h1>إدخال مصطلح</h1></div>
    <form method="post" action="add_term.php" enctype="multipart/form-data">
        <div class="style2">
            <br > المصطلح           
            <input name="txt_term" type="text" style="width: 482px" > <br >
            <br > ترجمة           
            <input name="trans" type="text" style="width: 482px" > <br >
            <br > وصف المصطلح           
            <textarea name="TextArea1" style="width: 480px; height: 30px"></textarea> <br/>
            <br> الصورة          
            <input name="File1" style="width: 488px" type="file"> <br>   <br/>
            <input name="Submit1" style="width: 76px" type="submit" value="إضافة" ><br> <br >
        </div>
    </form>

        </body>
</html>
```

Figure (27) HTMLcodetoAdd_term.php page

Notice the folloeing code:

```
<form method="post" action="add_term.php" enctype="multipart/form-data">
```

Which includes the following three facts:

<form method="post"	It's data transfer from the model to the Server.
" action="add_term.php"	It is to determine the name of the page you want to go to (add term.php) when you click the Submit button.
enctype="multipart/form-data">	It is used when they use the form to upload (photos) to the Server on the server, and if not used, images aren't uploaded within images "Pic" folder.

(2) Writing PHP code:

At this point, the term can enter add in the controls on the browser page, but data iazres not linked to the database, so we need to:

- showi "Banner" and addresses of web pages at the beginning of the screen and through add your PHP code to insert "Header" page in the place referred to the number (1) on the previous screen with the following code:

```
<?php
include("header.php");
?>
```

Figure (28) PHPcode to include Header page

- Tconnect to the database.
- Verifiy typing data in the controls on the web page.
- register term data in the database table through PHP code associated with the right "Add" in the place referred to the number(2) on the previous screen with next code:

```php
<?php
  include("connection.php");
     if(isset($_POST['Submit1']))
     {
          if(!is_dir('pic'))  { mkdir('pic');  }
     @$file=$_FILES['File1']['name'] ;
     @$tmp=$_FILES['File1']['tmp_name'];
          if(!empty($file))   {  move_uploaded_file($tmp,'pic/'.$file);  }
      $term=$_POST['txt_term'];
      $trans=$_POST['trans'];
      $defe=$_POST['TextArea1'];
      $picture="pic/" . $file . " ";
      if (  $term !== "" && $trans !== "" && $defe !== "" && !empty($file)  )
       {
        mysql_query("SET NAMES 'utf8'");
        $query=mysql_query("insert into terms values('','$term','$trans','$defe','$picture')");
             if($query)
                 {
                 $datares="تم اضافة البيانات بنجاح";
                 echo("<label id='Label1' style='color: #FF0000;font-size: x-large;'> $datares </label> ");
                 }
             else
                {
                 $datares="لم يتم اضافة البيانات";
                 echo("<label id='Label1' style='color: #FF0000;font-size: x-large;'> $datares </label> ");
                }
       }
      else
       {
           $datares="البيانات التى تم إدخالها غير صحيحة يجب إدخال جميع الحقول ";
           echo("<label id='Label1'  style='color: #FF0000;font-size: x-large;'> $datares </label>     ");
       }
    }
?>
```

Conditional clause to check for pic folder created in case of non-existence

It is conditional clause check ifwe selected image file

Figure (29) PHP code to add a new term

Dear Studen, see the detailed explanation of the code as follows:

```
<?php
```

-Includes the database connection page by the following code:

```
include("connection.php");
```

Verify clicking the Submit button.

-The following code checks if the user has clicked the "Add" button.First, we vertify that there is a folder named "pic" which is assigned to hold images Inside, if this folder is not created,we create it.

```
if (isset($_POST['Submit1']))
{

if (!is_dir('pic')) { mkdir('pic'); }
```

-By the same way you can create other folders for images or videos, whether with the code or through Operating system in the project folder.

Uploading image file in the server

We assign file name chosen by the user File1 to $file variable, with a note that the mark@, Called Pointer which Php language deals with as a variable, and this does not show up an error message if its value empty.

```
@$file=$_FILES['File1'] ['name'];

@$tmp=$_FILES['File1'] ['tmp_name'];
```

-Check whether the image file name is a not specific,the image file is loaded from the "pic" folder.

```
if (!empty($file))  {  move_uploaded_file($tmp,'up/'.$file);   }
```

Assign values in the variables controls

–The data, entered in the text boxes for the new term on the web page in the following variables,is stored in the order of $ term – $ trans $ defe$ picture)), notcing that the $ _POST variable stores its controls on the form Form elements of values when you press the Submit button.

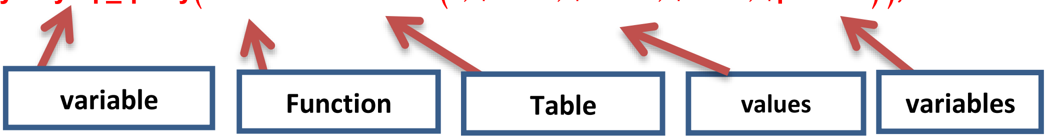
```
$term=$_POST['txt_term'];
$trans=$_POST['trans'];
$defe=$_POST['TextArea1'];
$picture="pic/" . $file . " ";
```

Verification of input values in the controls on the form Form elements

–The following If statment shows that these variables are not null; some vales were assigned into them. If the condition is true and all variables aren't null, if ststment does the following:

–The use of my sql_query function helps to show the data on a Web page in the Arabic; they don't appear in the form of question marks like this.؟؟؟؟؟؟؟

```
if ($term !== "" && $trans !== "" && $defe !== "" &&!empty($file) )
{
mysql_query("SET NAMES 'utf8'");
$query=mysql_query("into terms values ('','$term','$trans','$defe','$picture')");
```



–We created $query variable for which we assign the value of executing the mysql_query function containing "insert statement " related to

SQL language which will enter the data that are stored in the variables to the corresponding fields in the "terms" database table.

-Then be sure to enter data in the database if $query, If this is done you will see the message "data have been inserted successfully", otherwise the message "No one data have been provided." appears.

```
if ($query)
{
$datares="تم إضافة البيانات بنجاح";
echo("<label id='Label1' style='color:
            #FF0000;font-size: x-large;'> $datares</label>
            ");
}
else
{
$datares="لم يتم إضافة البيانات";
echo("<label id='Label1' style='color:
               #FF0000;font-size: x-large;'> $datares
</label>      ");
}
}
else
```

-In case of not entering data to all fields or some of them, the message "the data entered are incorrect. "You must enter all fields", is displayed"

```
{
$dataresa="البيانات التي تم إدخالها غير صحيحة يجب إدخال جميع الحقول";
echo("<label id='Label1'  style='color:
        #FF0000;font-size: x-large;'> $datares</label> ");
}
}
?>
```

Activity (9)

"Create a Page Add Term.php"

Dear student,

Now you can use webpage as an interface to deal with the database table to add a new term, and do other operations, through your Activity 9 activity book Page 53



Executing "Add term page"

On browsing "enter term page" in the internet browser, the page appears and through the following address:

localhost/dictionary/add_term.php



Figure (30) Window browse a page enter the term

- If you do not enter data and you cick the "Add" button, the message "the data entered are incorrect.You must enter all fields,"is displayed belowt he the browser screen as follows:



Figure (31) Review page enter the term incomplete data window

- On adding all data terms as follows:



Figure (32) window of inserting a term

- By clicking the "Add" button, the message "data are successfully added" appears below the bottom of the browser screen.



Figure (33) Window for ensuring to add the term correctly

(4)Be sure to add the term to the database

To make sure that you insert data to a new record in the database, open the database in a new tab Internet browser by typing the following link "localhost / phpmyadmin" in the address bar and make sure insert a new record in the "erms tabe:

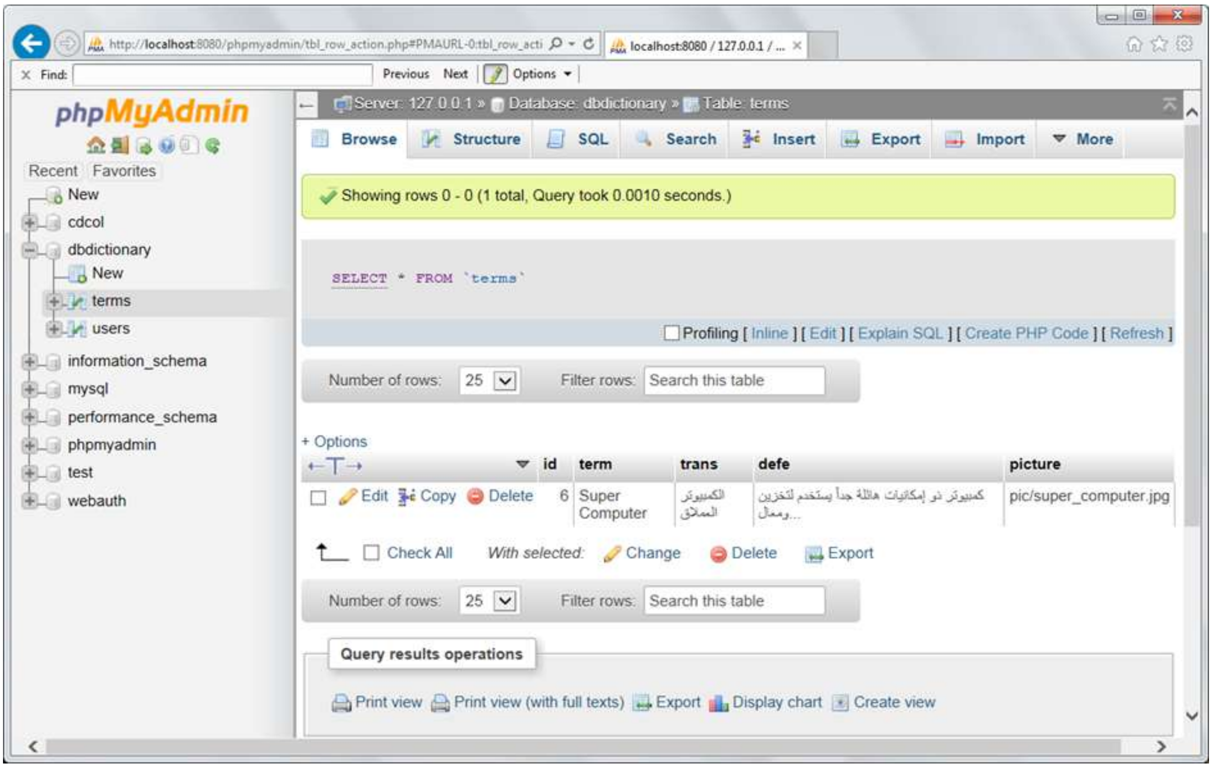


Figure (4) Window for ensuring to add the term in the database table

Goodbye
See you in the second term